

Exponent®
Engineering & Scientific Consulting

Julien Cohen-Waeber, Ph.D., P.E., P.G., C.E.G.

Senior Managing Engineer | Civil and Structural Engineering
Bellevue
+1-425-519-8758 | jwaeber@exponent.com

Professional Profile

Dr. Waeber has over 15 years of experience in geotechnical engineering and engineering geology, in North and Central America, Southeast Asia and Europe. He specializes in the assessment and mitigation of geologic hazards, construction support and characterization of weak and chaotic rock masses. Dr. Waeber has extensive experience with evaluation and design of dams, roadways, landfills, commercial development, pipelines, and natural and manmade slopes. He also has deep experience with the application of remote sensing technologies including continuous GPS, InSAR and LiDAR, particularly for landslide hazard assessment.

Dr. Waeber has a broad background in geo-engineering and is well versed in the evaluation of cause and origin of failures, risk assessment, mitigation alternatives, and proactive technical reviews of design and construction documents. He is experienced with topics including landslides, slope creep, slope stability, rockfall, expansive soils, sensitive soils, peat, petroleum geology, weak rock, chaotic rock, geotechnical earthquake engineering, surface fault rupture, retaining structures, slope stabilization measures, foundation design, mass grading and construction methods. Dr. Waeber is also particularly skilled in methods of surface and subsurface investigation and characterization, including remote sensing, geotechnical instrumentation and monitoring, geologic and hazard mapping, logging of subsurface borings, earthwork and construction observation, site history analysis and geotechnical laboratory testing of soils. He brings with him valuable experience in geotechnical engineering design and construction observation from projects related to transportation corridors, gas, oil and water utility transmission and distribution, commercial developments and critical infrastructure works such as dams, landfills, refineries, and bridges. Dr. Waeber also brings valuable experience in geological hazard assessments and monitoring from projects related to landslides, debris flows, rockfall, flooding, expansive soils and earthquakes.

Dr. Waeber's doctoral research focused on spatiotemporal behavior of seasonal landslide deformation, using InSAR and GPS remote sensing technologies to track ground surface displacements. He also served as a Research Affiliate at the Lawrence Berkeley National Laboratory and an Adjunct Instructor at Portland State University, teaching graduate courses on slope stability and engineering geology. Currently, Dr. Waeber is serving as a Lecturer at the University of Pennsylvania, teaching graduate courses on advanced engineering geology and landslides. Dr. Waeber is also Vice President of the International Association for Engineering Geology and the Environment.

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of California, Berkeley, 2018

M.S., Civil and Environmental Engineering, University of California, Berkeley, 2006

B.S., Engineering and Geology, University of California, Los Angeles (UCLA), 2003

© 2026 Exponent, Inc. All Rights Reserved

Outstanding Graduate Student Instructor, Civil and Environmental Engineering, University of California, Berkeley, 2016

Jane Lewis Fellowship Recipient, Civil and Environmental Engineering, University of California, Berkeley, 2013

Marliave Scholarship Recipient, Association of Environmental and Engineering Geologists, 2013

Lemke Scholarship Recipient, Association of Environmental and Engineering Geologists, 2013

National Society of Collegiate Scholars, 1999

Licenses and Certifications

Professional Engineer Civil, California, #72447

Professional Engineer Geologist, California, #2547

Professional Licensed Geologist, California, #8528

Professional Engineer Geologist, Oregon, #E2635

8-Hour HAZWOPER Managers and Supervisor Training

Academic Appointments

Lecturer, Earth & Environmental Science, University of Pennsylvania

Prior Experience

Lawrence Berkeley National Laboratory, Earth & Environmental Sciences Division, Research Affiliate, 2018-2025

Adjunct Instructor, Geology, Portland State University, 2023

Adjunct Instructor, Civil and Environmental Engineering, Portland State University, 2022

AECOM, Senior Geotechnical Engineer, Water Resources Department, 2014-2016

Independent Consultant in geological and geotechnical engineering, 2009-2018

Geosyntec Consultants, Engineer, 2006-2009

Arroyo Geotechnical, Staff Geologist, 2003-2005

Société Alpine de Géotechnique, Engineering Intern, May-September, 2002

Professional Affiliations

Association of Environmental and Engineering Geologists Foundation (Board Member)

International Association for Engineering Geology and the Environment (Vice President)

Engineering Geology Journal (Reviewer)

IEEE Transactions on Geoscience and Remote Sensing (Reviewer)

Journal of Geophysical Research, Solid Earth (Reviewer)

Quarterly Journal of Engineering Geology and Hydrology (Reviewer)

American Society of Civil Engineers (member)

American Geophysical Union (member)

Association of Environmental and Engineering Geologists (member)

Geological Society of America (member)

Languages

French (France)

Spanish

Publications

Cohen-Waeber J., Sykora, D. "Bonasa Breaks Ranch Dam (Washington, 2017)," Lessons Learned, Association of State Dam Safety Officials, published December, 2025.

TRE Altamira, Inc. and Exponent, Inc. (2024) "InSAR Analysis over the Eastern Coastline of Florida." (National Institute of Standards and Technology, Gaithersburg, MD), NIST GCR 24-055.

Kayen R. et al. Good Vibrations, "Terrain and Infrastructure Monitoring Across the Electromagnetic Spectrum," GEOSTRATA Magazine, American Society of Civil Engineers Geo-Institute, April/May 2023 issue.

Cohen-Waeber J. "Spatiotemporal Patterns of Seasonality in Landslide Deformation from InSAR and GPS," Ph.D. thesis. University of California, Berkeley, 2018.

Cohen-Waeber J et al. "Spatiotemporal Patterns of Precipitation-Modulated Landslide Deformation from Independent Component Analysis of InSAR Time Series," Geophysical Research Letters, February, 2018.

Cohen-Waeber J et al. "The Performance of Structures Subjected to Surface Fault Rupture during the Mw 6.0 South Napa Earthquake, California, USA," 6th International Conference on Earthquake and Geotechnical Engineering, Christchurch, New Zealand, November, 2015.

Bray J et al. Geotechnical Engineering, in M6.0 South Napa Earthquake of August 24, 2014, EERI Special Earthquake Report, October 2014.

Bray J, Cohen-Waeber J, Dawson T, Kishida T, and Sitar N. Editors, "Geotechnical Engineering Reconnaissance of the August 24, 2014 M6 South Napa Earthquake, Report of the NSF-Sponsored GEER Association, California Geological 43 Survey," Pacific Earthquake Engineering Research Center, and U.S. Geological Survey, GEER Association Report No. GEER- 037, Version 1: September 15, 2014.

Cohen-Waeber J et al. "GPS instrumentation and remote sensing study of slow moving landslides in the eastern San Francisco Bay hills, California, USA." 18th International Conference on Soil Mechanics and

Geotechnical Engineering, Paris, France, September, 2013.

Cohen-Waeber J et al. "GPS and Remote Sensing Study of Slope Movement in the Berkeley Hills, CA." Research Letter, 2013 Geo-Congress on Stability and Performance of Slopes and Embankments III, San Diego, CA, March, 2013.

Zekkos D et al. "Characterization of a Weak Rock Mass and Geoengineering Analyses for a Canyon Landfill in Northern California," 6th International Conference on Case Histories in Geotechnical Engineering, Arlington, VA, August, 2008.

Seed RB et al. "New Orleans & Hurricane Katrina: IV - The Orleans East Bank (Metro) Protected Basin," ASCE Journal of Geotechnical and Geoenvironmental Engineering Vol.134(5), 762-779, 2008.

Seed RB et al. "Investigation of the Performance of the New Orleans Regional Flood Protection Systems during Hurricane Katrina: Lessons Learned," Geo-Denver Congress, Geo-Institute, ASCE, Denver, CO, February 2007.

Seed RB et al. "Investigation of levee performance in Hurricane Katrina: The New Orleans drainage canals," Geo-Denver Congress, Geo-Institute, ASCE, Denver, CO, February 2007.

Seed RB et al. "Investigation of the Performance of the New Orleans Flood Protection Systems in Hurricane Katrina on August 29, 2005," Independent Levee Investigation Team: Final Report, July 31, 2006.

Proceedings, Presentations, and Published Abstracts

Cohen-Waeber J. Engineering Geology in the Court Room, Association of Environmental and Engineering Geologists, Oregon Chapter Meeting March 2023; Annual Meeting, September 2023; Puget Sound Chapter Meeting, January 2024.

Cohen-Waeber J. A Remote Sensing Approach to GeoHazards Assessments and Monitoring for Distributed Infrastructure Systems, Geotechnical Engineering Seminar, Civil and Environmental Engineering, University of Washington, Seattle, Washington, May 2023; AGA Operations Conference & Biennial Exhibition & Spring Committee Meetings, May 2023.

Johns M, Cohen-Waeber J. Oso Landslide Investigation, Continuing Education Course OSOMUD, American Institute of Architects, Remote, August 2022.

Cohen-Waeber J. Remote Sensing Technologies for Evaluating Structural Movement, Continued Learning Education Event, Colorado Defense Lawyer Association, Denver, Colorado, December 2021.

Cohen-Waeber J. Rock Mass - RMR. Invited Lecture, Engineering Geology (CE281), Civil and Environmental Engineering, University of California Berkeley, 2021-2025.

Cohen-Waeber J, Perri J. GeoHazards Assessment of Distributed Infrastructural Systems. Invited Lecture, e-YEG webinar series, Group of Young Engineering Geologists of the International Association for Engineering Geology and the Environment, November 2020.

Cohen-Waeber J, Wren J. Burning Down the House: Wildland Fire's Dramatic Effects on Environmental Issues. Invited Lecture, Division 10: Energy & Environment, Attorney Bar Association Forum on Construction Law 2020 Midwinter Meeting Tucson, AZ, January 2020.

Cohen-Waeber J. Rock Mass Characterization in Practice. Invited Lecture, Engineering Geology (CE281), Civil and Environmental Engineering, University of California Berkeley, 2019-2020.

Cohen-Waeber J. Spatiotemporal Patterns and Seasonality of Landslide Deformation from cGPS in the

San Francisco East Bay Hills, USA. 12th Asian Regional Conference of the International Association for Engineering Geology and the Environment, Jeju Island, South Korea, September 2019.

Cohen-Waeber J. Spatiotemporal Patterns of Seasonality in Landslide Deformation from InSAR and GPS. 2nd Annual Research Symposium, Geotechnical Engineering, University of California Berkeley, November 2018.

Cohen-Waeber J. Geological Engineering of Mass-Excavations in a Chaotic Rock at Landfill Sites in the San Francisco Bay Area, XIII Congress of the International Association for Engineering Geology and the Environment, San Francisco, California, September 2018.

Cohen-Waeber J. InSAR Tracking and Characterization of Precipitation-Modulated Seasonal Landslide Displacements in the San Francisco East Bay Hills, California, XIII Congress of the International Association for Engineering Geology and the Environment, San Francisco, California, September 2018.

Cohen-Waeber J. The Usefulness of Useless Concretions: One's Trash is Another's Treasure, Annual Meeting of the Association of Environmental and Engineering Geologists, Kona, Hawaii, September 2016.

Cohen-Waeber J, Burgmann R, Sitar N. Characterization of Precipitation Triggered Landslide Displacements by InSAR Observation in the Berkeley Hills, CA. Presentation, Annual Meeting of the Association of Environmental and Engineering Geologists, September 2013, 2016.

Cohen-Waeber J, Burgmann R, Sitar N. Characterization of Precipitation Induced Slow Moving Landslide Displacements by InSAR and GPS Tracking in the Eastern San Francisco Bay Hills, California, USA. Invited Presentation, Geology Minerals Energy Geophysics Science Center Seminar, United States Geologic Survey, Menlo Park, California, May 2015.

Cohen-Waeber J et al. Geotechnical Engineering Reconnaissance of the August 24, 2014 M6 South Napa Earthquake, California, USA, Presentation, Annual Meeting of the Association of Environmental and Engineering Geologists, Scottsdale, Arizona, September 2014.

Cohen-Waeber J, Burgmann R, Sitar N. GPS Instrumentation and Remote Sensing Study of Slow Moving Landslides in the Eastern San Francisco Bay hills, California, USA. Presentation, Annual Meeting of the American Geophysical Union, San Francisco, California, December 2012.

Cohen-Waeber J, Burgmann R, Sitar N. GPS Instrumentation and Remote Sensing Study of Slow Moving Landslides in the Eastern San Francisco Bay hills, California, USA. Presentations, Annual Meeting of the Association of Environmental and Engineering Geologists, September 2011, 2012.

Cohen-Waeber J, Medley E. The Importance of Mentor/Protégé Relationships in the Careers of Two Geological Engineers, Presentation, Annual Meeting of the Association of Environmental and Engineering Geologists, Salt Lake City, Utah, September 2012.

Cohen-Waeber J. What Students Need to Know About Careers in Engineering - On the Maturation of Baby Elephants: A Geological Engineering Perspective, Invited Lectures, Civil Engineering 98, University of California, Los Angeles, February/May 2009-2011.

Cohen-Waeber J. Geology and Geomorphology, Invited Lectures, Annual Range and Natural Resources Camp, Society for Range Management, Elkus Youth Ranch, Half Moon Bay, California, June 2008-2023.

Cohen-Waeber J, Bro A. The Mechanical Advantages of Shrink Wrapping Weak Rock Core, Presentation, Annual Meeting of the Association of Environmental and Engineering Geologists, New Orleans, Louisiana, September 2008.

Cohen-Waeber J, Medley E, Zekkos D. Incorporating Depth-Varying Geologic Strength Index Values to the Characterization of Weak Rock Masses in Northern California, Presentation, Annual Meeting of the

Association of Environmental and Engineering Geologists, Los Angeles, California, September 2007.

Cohen-Waeber J. Rock Mass Characterization in Practice. Invited Lecture, Engineering Geology (CE281), Civil and Environmental Engineering, University of California Berkeley, December 2019-2022

Cohen-Waeber J. Geology and Geomorphology, Invited Lectures, Annual Range and Natural Resources Camp, Society for Range Management, Elkus Youth Ranch, Half Moon Bay, California, June 2008-2022

Project Experience

Served as designated expert witness and provided expert consulting services in disputes related to landslide hazard, surface water runoff, groundwater seepage, foreign object debris damages, as well as the performance of cut slopes, stockpiles, pavements, retaining walls, and wastewater conveyance systems. As part of these disputes, Dr. Waeber has submitted expert reports, has been deposed and has testified in mediation, arbitration and trial.

Assisted designated expert witnesses in numerous disputes related to embankment dam failures, landslides, construction defects, expansive soils, flooding and the stability of lava tubes. These projects included the design and execution of extensive laboratory testing schedules, analysis of ground failures, remote sensing monitoring and the recovery of stolen Hawaiian cultural artifacts which had been sealed in lava tube caves with rock and concrete barriers.

Responsible for significant portions of dam development, retrofit, replacement and removal projects. As part of the San Clemente Dam Removal project, Monterey, California, Dr. Waeber was responsible for monitoring of the existing dam left abutment in relation to an active landslide and assisted in finding suitable and economic rock sources for construction of weirs and step pools in the new river re-route channel. As part of the proposed development of a new 110,000 acre/ft reservoir in Norther California, he was responsible for the preliminary geologic reconnaissance, site investigation planning and a dam type and sitting study. As part of the Calaveras Dam Replacement Project, in Alameda and Santa Clara Counties, California, he performed peer reviews of Franciscan rock mass characterization, slope cut and reinforcement design, and dam foundation mapping. He also provided reconnaissance, stability assessment and improvement design recommendations for construction access roads.

Responsible for the geologic investigations, laboratory testing of soil samples and design analyses for a variety of transmission systems, including storm drains, sewer lines, oil pipelines. Responsibilities generally included the complete investigation, laboratory testing and engineering characterization of soil properties. A highlight from these projects is a remote feasibility study for a 700 km long petroleum transmission system across the North Caspian Basin, Kazakhstan, which included a literature and satellite image review, cost estimating, and preparation of recommendations for investigation.

Responsible for the geologic investigations, laboratory testing of soil samples and design analyses for a variety of roadway projects, including pavement evaluations, and alignment studies. Responsibilities included pavement section and subgrade investigations, laboratory testing, and development of proposed roadway improvements and pavement design. One of these projects was a landslide hazard assessment and alignment feasibility study for a 13 km long new highway construction through dense tropical forest with tar-sands and oil seeps on the island of Trinidad. His responsibilities included a remote landslide investigation using LiDAR, followed by a field mapping effort, the development of alignment and cut slope recommendations and landslide and oil seep mitigation measures.

Responsible for complete rock and soil slope investigations and design for landfill expansion cells and quarry reclamation projects. Responsibilities included planning and execution of engineering geologic investigations and testing, characterization of soil and rock mass engineering properties and static and seismic design of up to 350 foot tall cut slopes including rock fall hazard assessments and catchment system design. For long-term stability and site development planning, performed analysis and quality

control of investigation data and design analyses during development through careful monitoring programs and provided rock and soil stockpile management assistance. Also provided geologic mapping of as-built excavated rock and soil, cut and fill slopes for water district record of landfill cell development.

Assisted engineers and contractors through a variety construction observation, monitoring and support projects, including the development of commercial buildings, construction of cantilever and MSE walls, mass grading and excavation, fill placement, gravity pipeline installation, water retention ponds, river embankment scour mitigation measures, ski lift systems and clay and rock borrow source determination. One project involved the development of special design considerations necessary to mitigate subsurface conditions including the presence of unconsolidated bay deposits, radioactive steel slag landfill, and intensely weathered sandstone bedrock. Other highlights include construction support for 72 inch diameter pipeline cut and cover operation with braced excavations through restricted access areas and with micro-tunneling segments; and construction support for ski lift systems on rock cliffs and steep slopes in the French Alps.